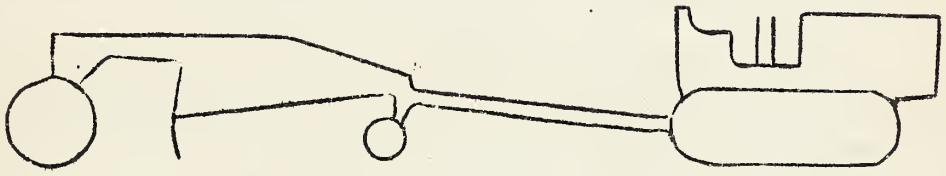
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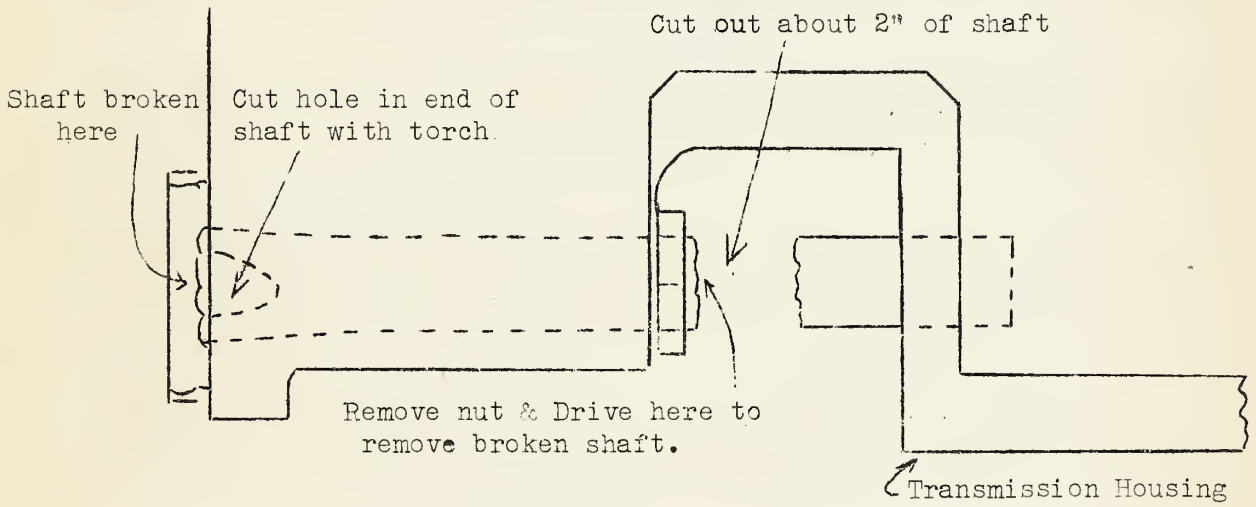


HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

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METHOD OF REMOVING BROKEN SHAFT FROM LATE MODEL CATERPILLAR TRACTOR. Submitted by Howard Mahler, Olympic National Forest.



Quick and easy method of removing broken sprocket shafts from late model Caterpillar tractors.

Back off nut from inside of shaft, then burn out 2" section and remove nut. Next start hole with cutting torch about 3/8" from top of broken section of short, penetrating 2" to 3". (The larger the hole the better). Douse quickly with cold water and drive out with long bar and sledge from inside. It is then a simple matter to work out remaining short piece of shaft from center of transmission case.

(over)

SLIDING MAP RACK - Shown on Opposite Page

This method of displaying maps was developed by V. H. Flach and R. F. Grefe of the Engineering Section of Region 6, because of the great need of having numerous mounted maps where they could be referred to conveniently at any time.

It is constructed of two 1/2" plywood panels 4'x5' and two sliding truck elements, making a rack 5'x8' in size. The widths of these sliding truck elements depends upon the number of tracks required for the map panels used; usually from 8 to 10 map panels. Strips 1/2" x 3/4" set 5/16" apart, parallel to each other on 3/4" boards, make up the track. These tracks are secured to the back with screws and with 3 iron braces on each track; these braces are made of 1/4" strap iron 2" wide about 12" long, bent at right angles, and are securely screwed in place.

The map panels of these racks are 4' square, but by increasing the length of the rack to 10' the map panels may be as large as 4'x5'. In the 8 or 10 foot rack one set of map panels are used, i.e., a map panel in each track. All the panels are arranged one behind the other at one end of the rack, the map required may then be slid to the other end as shown in the drawing and its entire area inspected.

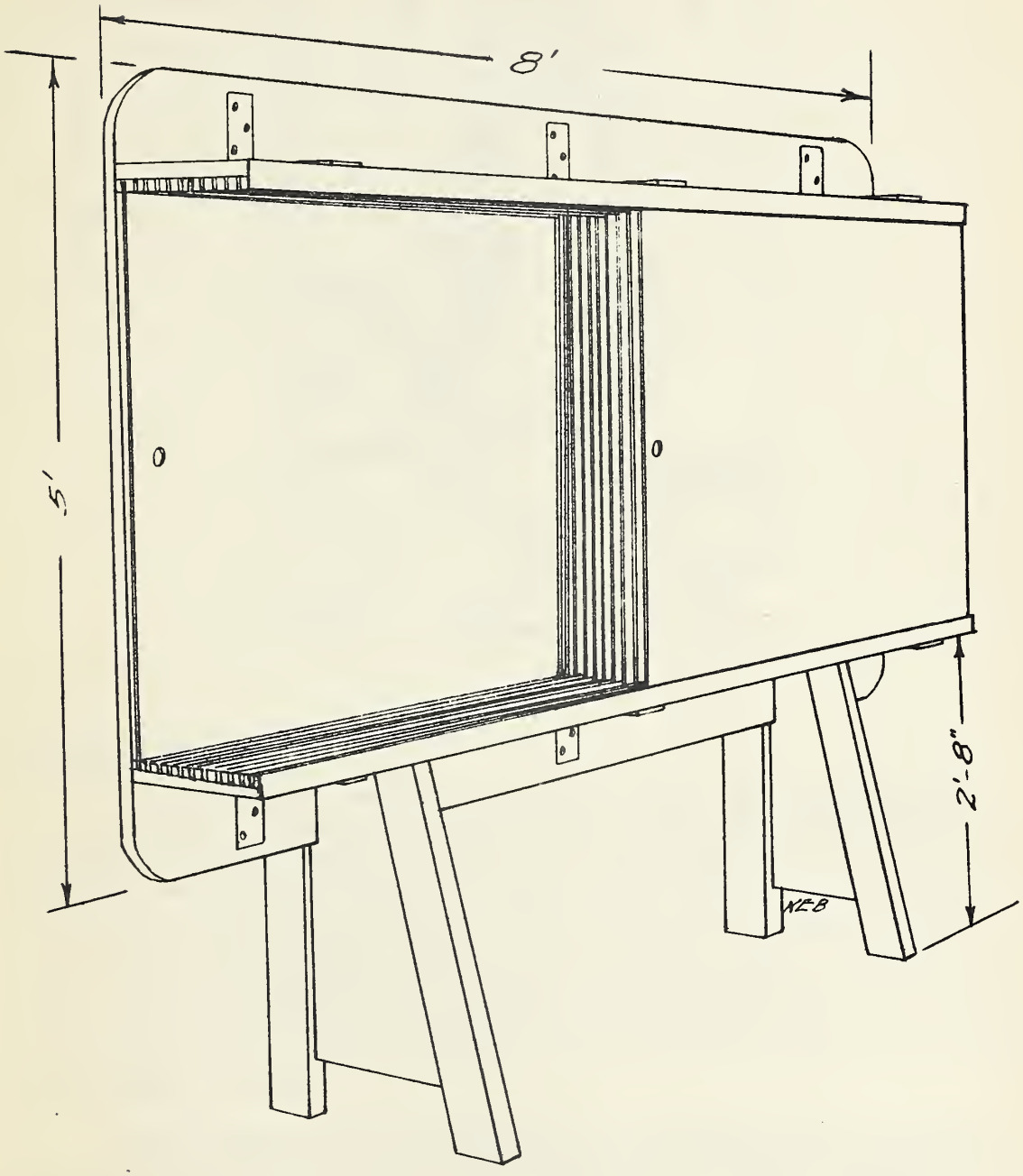
When the rack length is increased to 12 feet, two sets of panels may be used, i.e., two panels on each track, one set arranged at each end of the rack. The map required may then be slid to the center for inspection.

The map may be mounted or tacked on both sides, although one side is preferable for most uses. If both sides are used the rack should be constructed so as to allow the map panels to be pulled free from the rack in order that it may be turned over to bring the desired may into position.

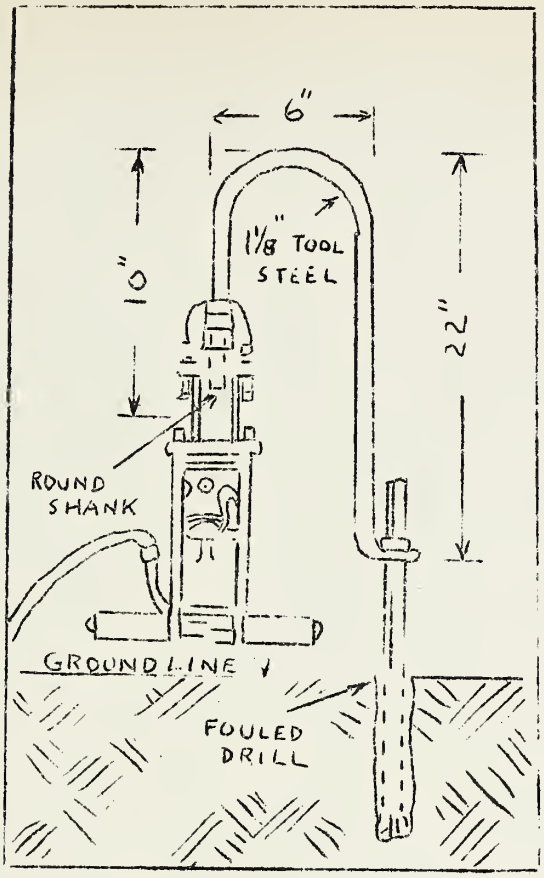
Holes 1" in diameter should be cut about 2" from each vertical edge about midway between the top and bottom to aid in sliding panels from one to another position.

This rack may be placed either on legs as shown in this drawing, or secured to the wall. If desired the rack may be enclosed and made dust proof by adding end pieces between the sliding elements and installing two sliding doors between them. If this is done, one of the ends should be hinged to permit removal of the panels. Hardwood veneer may be glued to all exposed parts and varnished to blend with the other office furniture.

SLIDING MAP RACK



JACKHAMMER IN REVERSE



Jackhammer in Reverse

A new method of removing drill steel that has become stuck in the drill hole has been developed. Use the same old "swede" wrench employed for this purpose since the days when rock was drilled by hand, and hook the wrench around the steel, but instead of twisting and pounding it in reverse with an 8-pound double jack, put a jackhammer connection on the "swede" wrench. Then round up the hexagonal shank on the steel so the jackhammer chuck will rotate without turning the steel. Set the jackhammer upside down (having two husky operators on the hammer), turn on the air, and hammer the steel back out. Not all stuck steel can be saved, but there is less loss of steel on jobs where this method is used.

These "swede" wrenches with the air attachment can be made in any convenient length to suit the operator, and any good blacksmith can make one out of a piece of tool steel bar of proper length and 1-1/8" to 1-1/4" diameter. Don't try to use 7/8" drill steel as there is too much spring in it.

G. W. Duncan, Equipment Engineer, R-1.